



Containment Isolators





Telstar has over 50 years' experience in the development of highly complex projects for pharmaceutical and biotech industries, from integrated process equipment using in-house technologies, to design, engineering and construction of plants, including turnkey project management and support for critical installations.

Telstar is a company with global vision that is acknowledged as a major supplier to the pharmaceutical industry, and has been designing and manufacturing Aseptic and Containment Barrier Isolators for over 25 years.

Installations range from high quality stand alone Isolators to customised solutions; Telstar's solutions are innovative with the capacity to develop and manufacture systems entirely in-house providing a cost effective solution and ensuring high quality control over the whole process.

Telstar has a dynamic team of experienced engineers using state of the art software to produce GMP designs with comprehensive validation packages. As an ISO9001 registered company, Telstar demonstrates a reliable and stringent quality management system including extensive in-house testing and compliance procedures.



Telstar offer engineering coupled with efficient manufacturing and business practices providing high quality solutions and superior value. Telstar is constantly developing solutions to address the emerging challenges in pharmaceutical containment Isolator technology.



Pharmaceutical formulation and compounding of active substances with excipients in aqueous solutions usually necessitates integration with a variety of process equipment. Such equipment may include process tanks/reactors of varying capacities dependent upon the batch size, which may be connected on a permanent fixed basis or may even be mobile and require connection/disconnection on a

In addition platform scales, load cells, integral mixing tanks, process connection valves and WIP systems are common features making up a complete package. Invariably given the geometry of the equipment, Isolators may be placed on raised platforms for operator access.

Depending upon the production process and product being manufactured the formulation or compounding Isolator package may be considered an entirely aseptic process, in which case the Isolator would be designed to suit grade A requirements.



At Telstar we are continually aware of the requirements of the pharmaceutical industry and the ever increasing demands to provide cost effective solutions for both small and large scale containment projects.

With the accelerated production of highly potent pharmaceutical drugs, the need for containment technology and interest in Isolators is ever increasing. Telstar has the experience and expertise to meet the rising challenges by offering an impressive range of containment Isolators, from single chambers to multi chamber systems accommodating where necessary a wide range of process equipment.



Telstar containment Isolators are designed to provide a locally controlled negative pressure environment with the ability to control and monitor all operating parameters, to provide protection to the operator and the surrounding environment from the highly potent products.

Successful design and manufacture of production scale containment systems demand a complete understanding of the actual process. Telstar has accumulated over 30 years' experience specialising in standard and high level customised systems to ISO7 and ISO 8 classification.



Telstar's technical team possess the expertise to understand the client's requirements and processes to design and manufacture bespoke equipment.

Half Suit Isolators

Some applications and activities are perhaps better managed by having greater flexibility of movement, which otherwise might not be entirely possible using traditional gloveport access alone. Being able to carry out operations using movement from the whole upper body rather than just outstretched arms eases many ergonomic issues presented by some tasks and enables the operator to work much easier within a larger area.



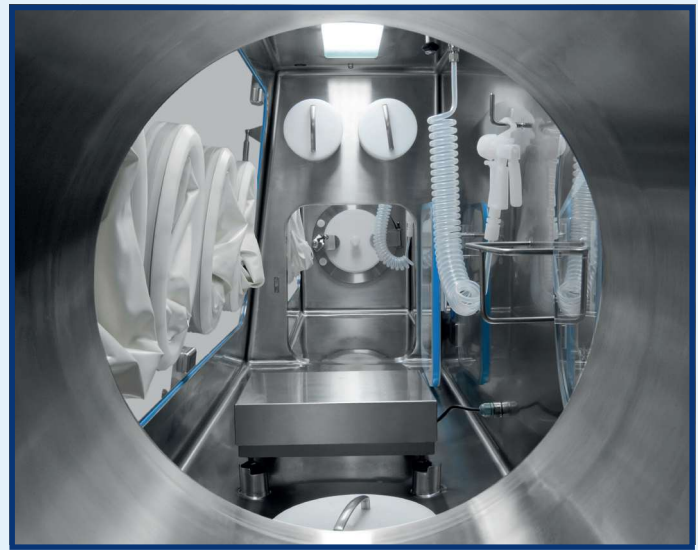
Half suits are available in a range of different materials and are manufactured to high standards providing maximum protection to the operator. In addition fresh air supply to the internal cavity ensures operator comfort at all times.

As an integral feature of the rigid wall Isolator, leak tightness of the complete assembly is tested on a regular basis, however the half suits themselves can be tested in isolation as part of an ongoing preventative and maintenance plan.



Sampling & Dispensing Isolators

Telstar supply standard or tailored Isolators to suit your specific needs, from single-chamber mobile Isolators to multi-chamber units offering easy manipulation of product, processes and tools. Ergonomic evaluation and modelling lie at the heart of our designs, delivering ease of access and maximum protection for operators and product.



Our sampling and dispensing Isolators guarantee OEL levels for active pharmaceutical ingredients and potent compounds to $<1\mu\text{g}/\text{m}^3$ over a task duration or TWA.

Typical features include:

- Safe-change inlet and outlet HEPA filtration
- On-board air-handling systems
- PLC control and HMI interfaces
- On board WIP systems

Charging & Off-loading Isolators

Telstar offer fully integrated systems giving maximum containment of potent compounds during charging, off-loading and sampling from vessels or filter dryers. Additionally Telstar produce containment systems that allow thorough and safe recovery of product heel from the dryer's surface membrane protecting the pharmaceutical product.

Small or large scale high containment product off-loading from filter dryers or centrifuges is one of Telstar's many areas of expertise, various single and multi-chamber methods of off-loading to ported bags, multi-lined kegs or IBC's have been manufactured worldwide successfully for nearly 30 years.





Proven Containment Technology

Validated to <200 picograms/m³

Equivalent to (OEB 8)

Fully Compliant

Telstar Containment Systems are guaranteed to comply with relevant standards and demands set by the regulatory bodies to ensure conformance and clients satisfaction.

Telstar provides a comprehensive validation service to clients providing FAT/SAT/DQ/IQ/QQ & PQ protocols if required.

As an ISO9001:2015 registered company, Telstar demonstrates a reliable and stringent quality management system including extensive in-house testing and compliance procedures.

Telstar is extremely proud of its achievements in Containment Isolators and as a recognised market leader in this field. Telstar continues to challenge the current boundaries in Isolator technology, to keep pace with the ever increasing demands laid down by the market.

Telstar Containment Isolation

Designed to provide operator protection from airborne particles and Potent APIs for a wide range of process applications, with and without integrated process equipment including:

- Dispensing/Weighing/Sampling
- Sieving/Blending
- Charging/API Addition
- Mixing/Granulation
- Formulation
- Centrifuge
- Freeze/Filter Dryer Off-Load/Pack-Off
- Milling/Micronising
- Tableting
- Final Packing/Blister Pack

Isolators for API's and cytotoxic compounds have been independently verified to achieve operator protection levels down to low nanogram levels.



Containment is an ever more important part of any pharmaceutical process and a clear understanding of that process is paramount to its success. Invariably this entails containing all aspects of the manufacturing process, so being able to provide a fully integrated system with third party OEM equipment is vital.

Telstar excels in providing complete systems with other equipment manufacturers and as such has developed standard integration designs and techniques.

Previous integrated packages include:

- Blending
- Milling
- Sieving
- Tableting
- Capsule filling
- Freeze drying
- Filling machines



Telstar systems are commissioned to operate at their optimal level, assuring you of maximum safety and technical performance. To maintain this exceptional quality we offer valuable inspection, re-testing and preventative maintenance packages that protect your investment and productivity.



Lyophilisation
Integrated Systems
Freeze Drying Process Development
Clean Room Systems
Sterilization Process Development
Sterilization
EPC Management
Consultancy
Barrier Systems
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Barrier Systems
Sterilization Process Development
Process & Water
Clean Room Systems
Engineering
EPC Management
Consultancy

The production site where the products are made has been assessed and given ISO 9001:2015 approval.
All equipment is manufactured to allow it to be CE marked in accordance with 2006/42/EC Machinery Directive.

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